

Resumo ID: 207-2

Especialidade: Manejo Integrado de Pragas

COMPARATIVE PEST MANAGEMENT ON TRANSGENIC (NUOPAL) AND CONVENTIONAL (DELTA OPAL) COTTON

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Abstract

A comparison of pest management was drawn between two cotton cultivars, NuOpal (with the *cry1Ac* gene) and DeltaOpal (nearly isogenic), at the Ceres Consultoria Agronômica's Experimental Field, in Primavera do Leste – Mato Grosso, during the 2007-2008 cropping season. The objective was to produce field reference data on the management of insects or mites not targeted by the Cry1Ac toxin. It was devised as follows: random ranges of fifteen 136 m-long rows of each cultivar with four repetitions. The management was that of a standard commercial production unit of the region, including pest and disease monitoring of 40 plants by range up to 43 days old and 25 after that age, twice a week until 80 days old and once a week after that, due to the frequent control of the boll weevil. The threshold levels adopted were those recommended by Ceres. The populational fluctuation of *Spodoptera frugiperda* and *Pectinophora gossypiella* adult males was observed using five and four pheromone traps, respectively. A light trap was placed for other species. Two thousand and eight hundred green bolls (7 collections x 400 bolls) were analyzed per cultivar. The results demonstrate that the toxin is effective in controlling its target pests *Alabama argillacea*, *Heliothis virescens* and *Pectinophora gossypiella*. Chemical control was necessary for the non-target Lepidoptera, mainly *Pseudoplusia includens* and *Spodoptera eridania*, the last one having required one insecticide application on the Bt cultivar. On four surveys, the NuOpal cultivar had a significantly lower number of caterpillars than the DeltaOpal. The peak of *Pseudoplusia includens* coincided with the end of the soy-bean harvest (February/March) indicating the pest's migration. The same management was adopted for other insects and mites.

Keywords: *Bt Cotton, management, non-target pests, Brazil*